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ALBATROS, THE RUSSIAN SHUTTLE

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ALBATROS, THE RUSSIAN SHUTTLE

While the United States is making plans for the second test flight of the space shuttle, rumors have it that the Soviet Union is busy making plans for their own shuttle-type spacecraft. The biggest difference between it and its American counterpart is that it will be launched from a mothership which makes its ascent from the horizontal rather than the vertical. This mothership or booster rocket which carries the shuttle piggy-back is itself launched from a boat. In the event of a problem in the opening stages of lift-off, this type of launch is much safer than that of the American space shuttle. The American shuttle is still launched from the normal rocket position which is in the vertical.

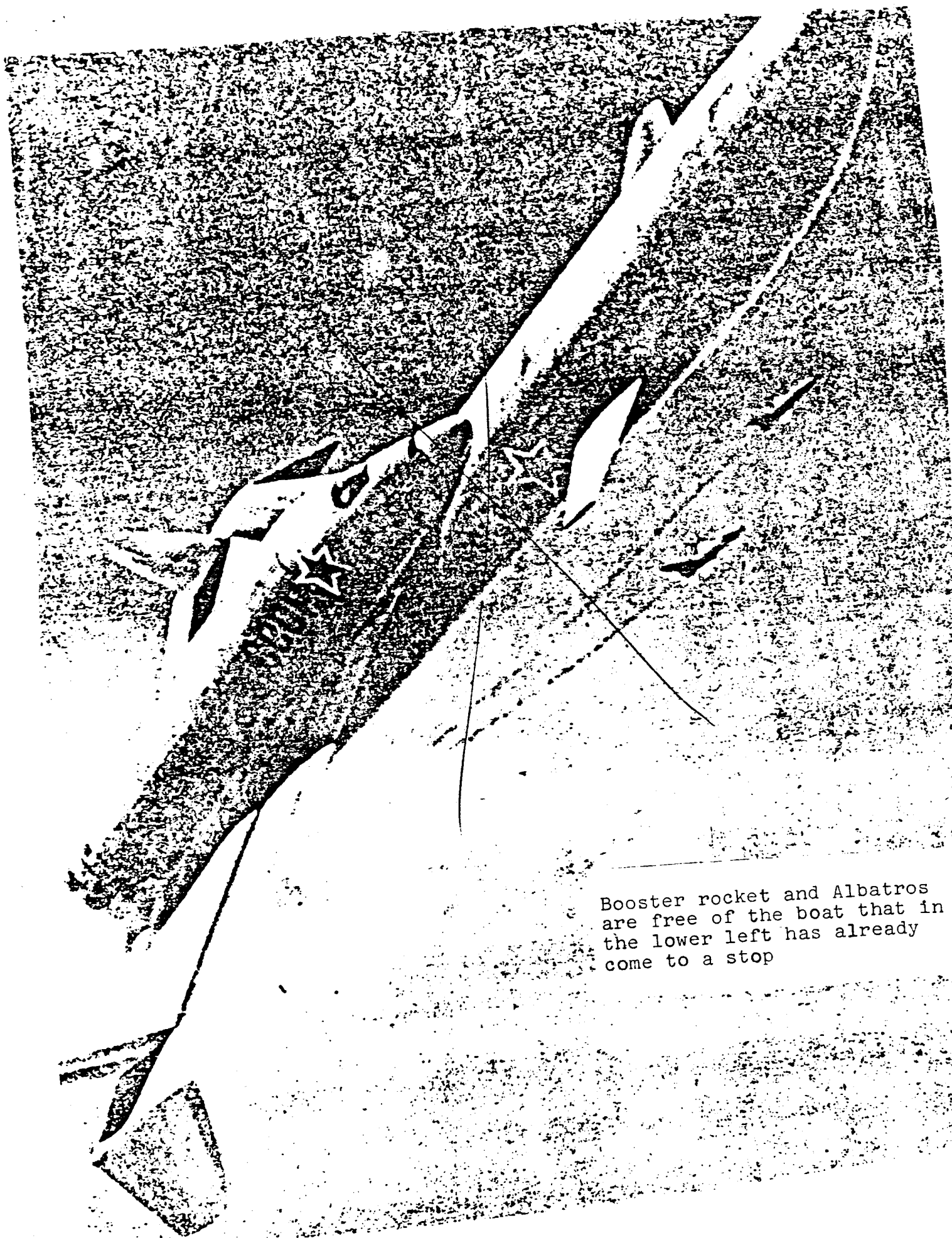
Here is the procedure for the shuttle launch. The Albatros, its rocket (which it rides piggy-back) and the boat itself are then propelled to a speed of 100 KM per hour. Then the rocket-shuttle combination (Figure 2) breaks free of the boat and increases its speed to about 6500 KM per hour (Figure 3). The Albatros then breaks free of the booster rocket and begins its flight into space under its own power (Figure 4). The booster rocket then rolls on its own axis and adjusts itself for a return to Earth as a regular airplane. Illustration: Phil Tieland.

The whole launch system is divided into three parts. The basis of this configuration is the launch boat which is actually the launch platform. This launch ship is a version of an airfoil boat. On the top of this launch ship is the rocket (91 meters long and a maximum of 40 meters wide) which in turn carries the actual shuttle itself, the Albatros.

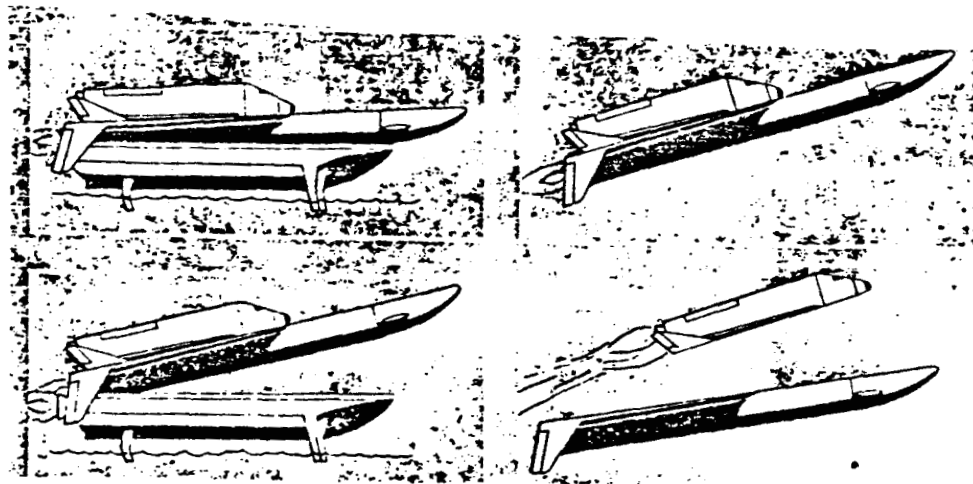
This Russian space shuttle is about as long as its American counterpart. However, it is about 7 meters wider. It is not known whether the Albatros is the beginning of a larger space project. That remains to be seen.

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RUSSISCHE OPMARS IN DE RUIMTE
DEIVELSKUNSTEN BIJ NACHT EN ONT
'S WERELDS GROOTSTE HELIKOPTER
AOPEN IN HUN ELEMEN
PEKEEKREEFJES ONDER ONZE MIKROSKOOP

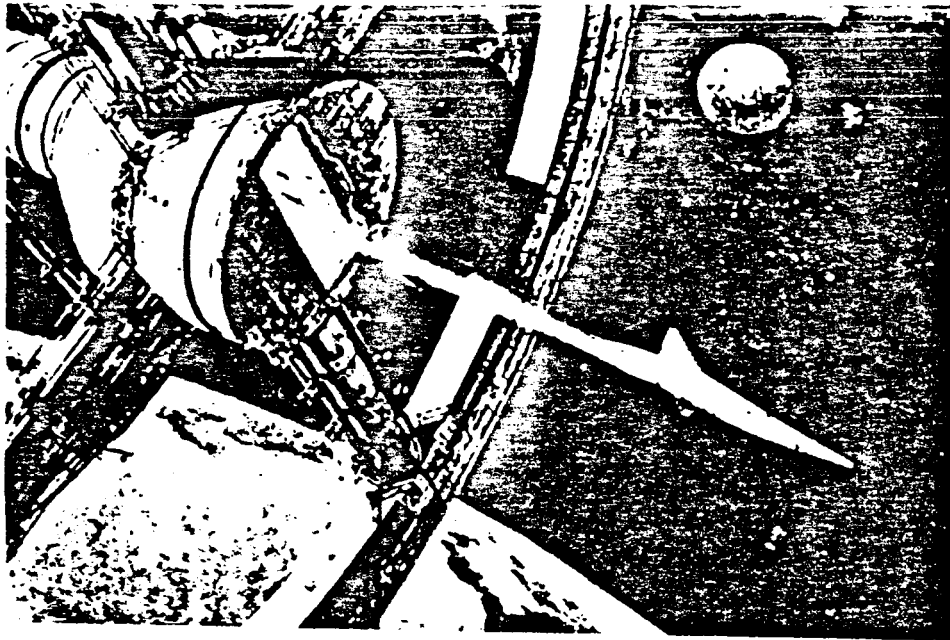


Booster rocket and Albatros
are free of the boat that in
the lower left has already
come to a stop



In 1977, Maarten Houtman published an article in the Dutch publication Spaceview whereby he revealed the existence of the Russian shuttle Albatros. He said that it consisted of a three-part launch unit with the launch itself originating from a body of water. The launch boat was based on a well known air-foil ship, the Raketa. The second part is the booster rocket which will give the actual shuttle its speed. All three parts of this launch unit are reusable. Now that the Soviets use their space stations efficiently, they now plan on making ferry stations for the Albatros. In an interview with the director of the Institute of Space Exploration in Moscow, Prof. Georgi Narimanow, stated the need for the "ferry stations". He said there were three important points. First, a transport and shuttle system that is reusable is the most desirable. Next, they will try to make the most efficient use of manpower in space. The efficient functioning of manpower in space fits into the Russian plan for space stations whereby groups of 20 to 30 men will work in space for periods of up to 2 or 3 years.

The need for a good transport system for men and materials to the space stations is a very important point at the moment since the use of the Saljoet space station is under way. Analysis of the problem shows two more important points. A transport system to and from the Saljoet space station is needed for both



A Russian looks out to the stars as an Albatros leaves the giant space station

cosmonauts and freight. The biggest bulk of the freight will be transported on the first flight and thereafter the payloads will be considerably smaller.

Two types of ships will be constructed based on these two principles. The Sojoez for all the return flights and the Progress for materials and fuel. The Progress will then be used as a sort of space garbage can which when full will be burned in the atmosphere. The experiments being done with this system will enable further development in the transport system to continue based on the reusable shuttle craft. This will be done in two steps. The thrust of the engines will come in two "kicks". The first will come at lift-off and the second will come from the booster rocket. The two engines that give these thrusts will, of course, be reusable.

ARRANGEMENT OF SPACE STATIONS

During the flight of Saljoet 6 many ideas were uncovered on how to split up the work between the crew (manual) and the automatic equipment. At the moment, the stations have so much automatic equipment that the crew will be bogged down with having

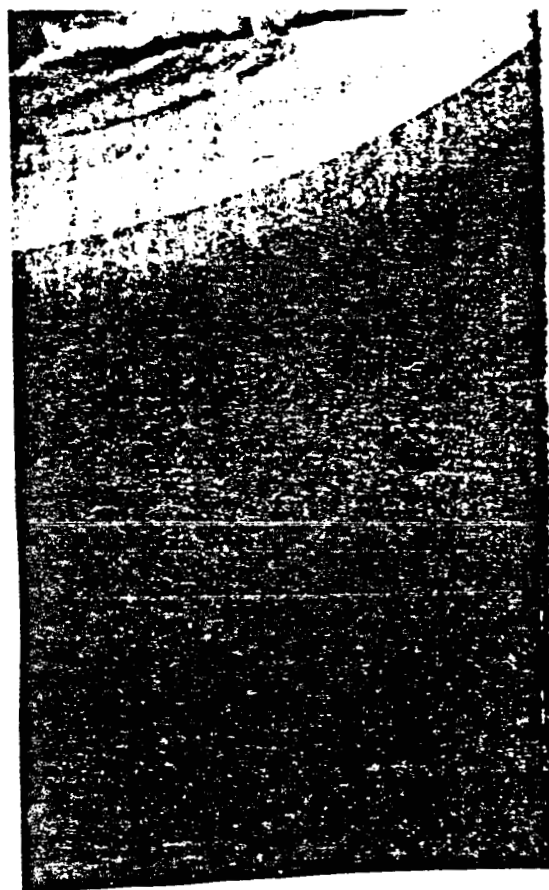
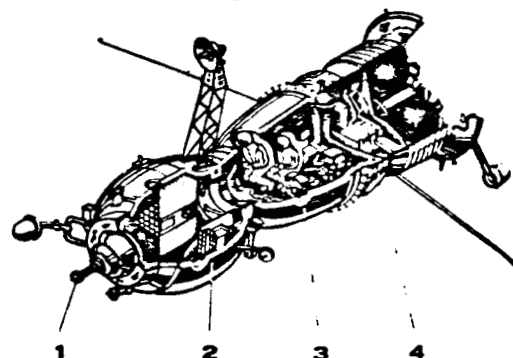
to control all this equipment. The best plan seems to be to let the equipment do most of the work and have the crew stay busy at just a maintenance level.

Prof. Narimanov does not believe that the space stations will cause too many unforeseen problems. "At the moment, we are already trying to solve all the possible problems that may come up and we are testing different methods of space exploration. The bigger the space station, the longer it will take to experiment and build it. This also means that it could also become obsolete by the time it reaches launch date. It would be much more practical to design and build smaller space stations such as the Saljoet type. This will also be much more inexpensive to space budget. We should also concern ourselves with only the most important of space tests and explorations.

"Also, we are now tackling the problems that could come up with the space stations that will have a crew of 20 or 30. The biggest of the stations will be put together by attaching smaller capsules to a large central compartment. These capsules will have a round or cylindrical shape.

This is the Progress as it will supply the Sojoez. The Sojoez has been changed internally to accept cargo. The living and work modules can be coupled to the "return module"

1. coupling
2. living and work module
3. return module
4. service compartment



The central compartment will be mainly used by the crew. The other smaller capsules will hold the various laboratories. The Albatros will, of course, ferry the crew from Earth to the station and back".

It will yet have to be seen if these plans will be implemented.

STANDARD TITLE PAGE

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